

**IN THE CLAIMS**

1. (withdrawn) A system for removing mercury in exhaust gas, in which mercury is removed from exhaust gas of a boiler, characterized in that

an  $\text{NH}_3$  decomposition catalyst for decomposing  $\text{NH}_3$  flowing down from the outlet of said denitrification apparatus and a mercury oxidation catalyst for oxidizing mercury into mercury chloride on the downstream side of said  $\text{NH}_3$  decomposition catalyst are provided between a denitrification apparatus and a wet type desulfurization apparatus, and mercury having been oxidized into mercury chloride is removed by said wet type desulfurization apparatus.

2. (withdrawn) The system for removing mercury in exhaust gas according to claim 1, characterized in that

in the mercury removing system in which heating means and a heat exchanger are provided between said denitrification apparatus and wet type desulfurization apparatus,

said mercury oxidation catalyst is installed at least at one location of between the downstream side of said  $\text{NH}_3$  decomposition catalyst and the upstream of said heating means, between the downstream side of said heating means and the upstream of said heat exchanger, and between the downstream side of said heat exchanger and the upstream side of said wet type desulfurization apparatus.

3. (withdrawn) The system for removing mercury in exhaust gas according to claim 1 or 2, characterized in that said mercury oxidation catalyst is a catalyst in which at least one kind selected from a group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$  and zeolite is used as a carrier, and at least one kind selected from a group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu and Mn is carried on said carrier as an active component.

4. (withdrawn) The system for removing mercury in

exhaust gas according to claim 1 or 2, characterized in that said  $\text{NH}_3$  decomposition catalyst is a catalyst in which at least one kind selected from a group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$  and zeolite is used as a carrier, and at least one kind selected from a group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu and Mn is carried on said carrier as an active component.

5. (currently amended) A method for removing mercury in exhaust gas, in which mercury is removed from exhaust gas of a boiler, characterized in that

said mercury removing method comprises an  $\text{NH}_3$  decomposition process for decomposing excess  $\text{NH}_3$  flowing down from a denitrification process and a mercury oxidation process for oxidizing mercury into mercury chloride on the downstream side of said  $\text{NH}_3$  decomposition process, which are provided between said denitrification process and a wet desulfurization process, and mercury having been oxidized into mercury chloride is removed in said wet desulfurization process, said  $\text{NH}_3$  decomposition process is separate from said denitrification process.

6. (original) The method for removing mercury in exhaust gas according to claim 5, characterized in that

in the mercury removing method comprising a heating process and a heat recovery process, which are provided between said denitrification process and wet desulfurization process,

said  $\text{NH}_3$  decomposition process is carried out in a temperature zone of 300 to 450°C on the downstream side of said denitrification process, and

said mercury oxidation process is carried out at least in one location of a temperature zone of 300 to 450°C on the downstream side of said  $\text{NH}_3$  decomposition process, a temperature zone of 120 to 200°C on the downstream side of said heating

process, or a temperature zone of 60 to 120°C on the downstream side of said heat recovery process.

7. (original) The method for removing mercury in exhaust gas according to claim 5, characterized in that when said mercury oxidation process is carried out on the downstream side of said heating process, the temperature is controlled to a predetermined temperature in the range of 60 to 200°C.

8. (original) The method for removing mercury in exhaust gas according to claim 5 or 6, characterized in that the temperature in said mercury oxidation process is controlled by measuring the concentration of metallic mercury or mercury chloride in an oxidation catalyst outlet gas in said mercury oxidation process.

9. (original) The method for removing mercury in exhaust gas according to claim 5 or 6, characterized in that in said  $\text{NH}_3$  decomposition process,  $\text{NH}_3$  is treated so that the concentration of  $\text{NH}_3$  at the outlet is 1 ppm or lower, and then mercury is oxidized in said mercury oxidation process.

10. (new) The method for removing mercury in exhaust gas according to claims 5 or 6, further comprising a  $\text{NH}_3$  decomposition catalyst, said  $\text{NH}_3$  decomposition catalyst comprises a carrier and an active component, said carrier is selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$ , and zeolite, and said active component is selected from the group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu, and Mn.

11. (new) The method for removing mercury in exhaust gas according to claims 5 or 6, further comprising a mercury oxidation catalyst, said mercury oxidation catalyst comprising a carrier and an active component, said carrier is selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$ , and zeolite, and said active component is selected from the group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu, and Mn.

12. (new) A method for removing mercury in exhaust gas, in which mercury is removed from exhaust gas of a boiler, characterized in that

said mercury removing method comprises a  $\text{NH}_3$  decomposition process for decomposing excess  $\text{NH}_3$  flowing down from a denitrification process and a mercury oxidation process for oxidizing mercury into mercury chloride on the downstream side of said  $\text{NH}_3$  decomposition process, which are provided between said denitrification process and a wet desulfurization process, and mercury having been oxidized into mercury chloride is removed in said wet desulfurization process, said  $\text{NH}_3$  decomposition process is separate from said denitrification process, and

wherein said  $\text{NH}_3$  decomposition occurs over a catalyst comprising a carrier and an active component, said carrier is selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$ , and zeolite, and said active component is selected from the group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu, and Mn.

13. (new) The method for removing mercury in exhaust gas according to claim 12, further comprising a mercury oxidation catalyst, said mercury oxidation catalyst comprising a carrier and an active component, said carrier is selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$ , and zeolite, and said active component is selected from the group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu, and Mn.

14. (new) A method for removing mercury in exhaust gas, in which mercury is removed from exhaust gas of a boiler, characterized in that

said mercury removing method comprises an  $\text{NH}_3$  decomposition process for decomposing excess  $\text{NH}_3$  flowing down from a denitrification process and a mercury oxidation process for oxidizing mercury into mercury chloride on the downstream side

of said  $\text{NH}_3$  decomposition process, which are provided between said denitrification process and a wet desulfurization process, and mercury having been oxidized into mercury chloride is removed in said wet desulfurization process, said  $\text{NH}_3$  decomposition process is separate from said denitrification process,

wherein said mercury oxidation occurs over a catalyst comprising a carrier and an active component, said carrier is selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$ , and zeolite, and said active component is selected from the group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu, and Mn.

15. (new) The method for removing mercury in exhaust gas according to claim 14, further comprising a  $\text{NH}_3$  decomposition catalyst, said  $\text{NH}_3$  decomposition catalyst comprises a carrier and an active component, said carrier is selected from the group consisting of  $\text{TiO}_2$ ,  $\text{SiO}_2$ ,  $\text{ZrO}_2$ ,  $\text{Al}_2\text{O}_3$ , and zeolite, and said active component is selected from the group consisting of Pt, Ru, Rh, Pd, Ir, V, W, Mo, Ni, Co, Fe, Cr, Cu, and Mn.